Weather Briefing for 20050126

Today's briefing is delayed due to the briefer (me) preparing for today's flight. Today's flight has, in fact, been cancelled due to weather. The storm projected to come in today has, in fact, arrived. The new forecasts have it departing somewhat later than forecast. Thus, the wind shift from northeasterlies to northerlies has been postponed to after landing. The result is projected wind gusts with a cross wind component of as much as 15 knots. That, combined with the borderline projected visibility (.5 miles – the DC-8 limit for landing), resulted in a decision to cancel the flight rather than risk an expensive and disruptive diversion.

The low center is currently over central Pennsylvania and it is snowing. Models are consistent in showing snow ending by 7 AM tomorrow (or sooner), with projected accumulations of 7 inches. Temperatures are low (14F) and not projected to warm much above 20F, which means the snow will be fluffy. As the low moves off the coast and intensifies, it will bring in cold air, with 1000-500 mb thicknesses below 510 by tomorrow. The departing low, and descending air following it will yield sunny and cold conditions on Thursday (highs in the low teens), with winds up to 25 mph. Those winds will be down the runway from the north, decreasing during the day. Thursday night will be very cold (4F).

At upper levels, the departure of this most recent storm brings a moderate to weak ridge for the next four days or so. The eastward movement of the upper level trough out of our area and the entrance of this ridge bring some warmer air above us. Thus, high temperatures will be near 30 by Sunday. At the surface, we will have high pressure to the west of us. Small vorticity perturbations in the upper level jet propagating over us will give us occasional snow showers and cloudiness through Monday. The next system of any magnitude will come in Tuesday. If the GFS verifies, this could be significant for us, since it will track further north than the previous systems and hit us harder than Massachusetts. Models diverge, though, with the Euro showing the surface low about 15 degrees further south (!). In general, talk about next Tuesday is more or less in the realm of imagination. Bottom line is that flying conditions at Portsmouth are good through Sunday, maybe Monday.

Flight level and other cloudiness.

For tomorrow's flight north to Resolute to survey the nearby stratospheric vortex, we are in the middle of an upper level trough, with the tropopause below 29kft along most of the track, which means no flight level clouds. See http://bocachica.arc.nasa.gov/PAVE/rh_omega/TR_peasetp_35kft_day118.pdf for details. For our next flight opportunity, Saturday, there is a clear region over the northeastern and east central US (http://bocachica.arc.nasa.gov/PAVE/rh_omega/CA_peasetp_500mb_day312.pdf). The reason for this is descending air ahead of the upper level ridge. Also, since the air is not so cold, we expect fewer instability clouds over the ocean (which is a quite frequent occurrence just after a cold outbreak). One concern is encroaching high cloudiness from

the west along the TES track which goes from Cape Hatteras to Toronto. (http://bocachica.arc.nasa.gov/PAVE/rh_omega/RH_peasetp_29kft_day312.pdf Vertical velocities are not very strong, though, so expect the high clouds to be fairly thin. At low levels http://bocachica.arc.nasa.gov/PAVE/rh_omega/RH_peasetp_850mb_day312.pdf we have a broad region of dry air.

Stratosphere:

Overall, a fairly simple picture here, with persistence being the watchword. Sunday afternoon (as far as my forecasts go) shows the vortex at 450K largely maintaining its position and strength.